

Noël GOLVERS

TWO OVERLOOKED LETTERS OF FERDINAND VERBIEST
TO ATHANASIUS KIRCHER. HOW A MISSIONARY PROJECT
WAS SHAPED, AND KIRCHER'S BOOKS WERE RECEIVED
IN MID-17TH-CENTURY SPAIN AND PORTUGAL¹

During my preparations for a supplement to the correspondence of Ferdinand Verbiest (1623-1688), with some 60 new items not offered by the previous edition of H. Josson & L. Willaert (finalizing the work of their fellow father H. Bosmans), two letters of the young Ferdinand Verbiest to Athanasius Kircher (1602-1680) came to light.² Both are preserved in the huge collection of letters addressed to Kircher at the *Collegio Romano*, now in the *Archivio* of the *Pontificia Università Gregoriana* (APUG) in Rome, the historical heir of the pre-1873 *Collegio Romano*. They were overlooked by H. Bosmans when he collected Verbiest's letters for his edition, as he never visited Rome. Verbiest's letters were at that time — as part of the historical Jesuit archives in Rome — in Holland (Exaeten / Valkenburg) and were edited by Bosmans in Brussels, partly on the basis of some work visits, partly thanks to photographs which he had received from there.³ Some other letters in other Roman

¹ I owe much to the kind collaboration of Dot.ssa L. Salviucci Insolera (APUG), and to P. Van Dessel (KULeuven), who revised the English version of this text.

² Henri Josson — Léon Willaert, *Correspondance de F. Verbiest de la Compagnie de Jésus (1623-1688) Directeur de l'Observatoire de Pékin* (Bruxelles: Palais des Académies, 1938). H. Bosmans, S.J. (1852-1928) was a prominent historian of the Belgian mathematicians, Jesuit and others; on his scientific curriculum, see, a.o., Henri Bernard-Maître, 'Un historien des Mathématiques en Europe et en Chine: Le Père Henri Bosmans, S.J. (1852-1928)', *Archives internationales d'histoire des sciences*, 3 (1950), 619-656 and Paul Pelliot, 'Henri Bosmans, S.J.', *T'oung Pao*, 26 (1929), 190-199. The two overlooked letters are, however, mentioned in Wiktor Gramatowski - Marjan Rebernik, *Epistolae Kircherianae. Index alphabeticus. Index geographicus. Subsidia ad Historiam S.I.*, 11 (Romae: Institutum Historicum S.I., 2001), pp. 108-109.

³ These working visits took place, a.o., during the Christmas holidays of 1909-10 (26/12-4.1) and the Easter holidays of 1911. These photographs are still preserved in the *Archives de la Province belge méridionale de la Compagnie de Jésus* (rue A. Fauchille, 6, B-1150 Brussels).

collections were overlooked as well, e.g. Verbiest's application letter then in the *Archivio di Stato (di Roma)*, now in *Archivum Romanum Societatis Iesu* (ARSI).⁴

Whereas the present publication of two Verbiest autographs addressed to Kircher is therefore a complement to the Verbiest correspondence available so far and a precursor of the forthcoming supplement, these items are interesting in two further respects. First, their importance may be seen in the prominent place both Kircher and Verbiest held within various areas of 17th-century (Jesuit and Western) culture, especially in that of the history of science. They are the only reliable indication for a direct connection between both men, thus offering enticing outlooks on possible forms of influence, especially of Kircher on Verbiest, which I will describe on another occasion. Second, both letters are the only testimonia so far for two almost unknown episodes in Verbiest's formative period, viz. his two-year stay in Seville (1653-55) and the consecutive one-year stay in Coimbra (1656). They allow us at least some glimpses into his spiritual and intellectual life during these periods, of which especially the Coimbra period and his teachership at the *Colégio das Artes* — wholly unknown before — has more than superficial importance both for the reconstitution of his own scientific and mathematical background, and for the historiography of Jesuit mathematical education in post-Clavian Europe.⁵

1. The background: F. Verbiest and A. Kircher / G. Schott in the *Collegio Romano* (1652-53)

Both letters, with their personal address to Athanasius Kircher and his personal assistant Gaspar Schottus (1608-1666) hint at a direct acquaintance of the sender with the addressees, Kircher's scientific interests, his

⁴ On the presence of Verbiest documents in Roman collections, see my contribution: 'Chinese, Western, autograph and printed documents by Ferdinand Verbiest, S.J. in Roman libraries, past and present', *Bulletin de l'Institut Historique belge de Rome* (2005). Other items were also overlooked, such as the item in Plantin Moretus Museum in Antwerp (of which the catalogue was only published in 1927), Verbiest's autograph letters in the Madrid archives and especially the ca. forty 18th-century copies in the Ajuda library (Lisbon).

⁵ See my article 'F. Verbiest's mathematical formation. Some considerations on post-Clavian Jesuit mathematics in Europe', forthcoming in *Archives internationales d'histoire des sciences* (2005).

work in progress etc.⁶ All this is the immediate consequence of F. Verbiest's stay in Rome in the *Collegio Romano*, as a 1st-year theology student in the academic year 1652-53. Other, direct evidence for his Roman episode is very poor, and stems in the first place from the *Catalogi* of the same College, which confirm Verbiest's enrolment among the '*Imi theologi*' in the same year.⁷ The choice of Rome — not the Flemish Province — for his theological studies seems to anticipate some 'missionary' plans of the Provincial, J.-B. Engelgrave (1601-1658), with regard to Verbiest. Another almost unknown proof of F. Verbiest's stay in Rome concerns the end of his stay there, and is found in the postscript of a letter of 11 October, addressed by Aegidius (Gilles) Estrix, S.J. (1624-1694) to Jacobus Wallius, S.J. (1599-1690) in Belgium, which was published by A. Roersch.⁸ Estrix was a fellow countryman of Verbiest who had accompanied him already during earlier stages of his Jesuit curriculum, viz. in the Noviciate in Mechelen (1641-43) and in their shared period as '*repetentes*' in the Jesuit College of Kortrijk (1645-46), with Sidronius Hosschius, S.J. (1590-1653) as their *magister*.⁹ In 1652-1653 Estrix was — as the aforementioned *Catalogi* of the *Collegio Romano* demonstrate — Verbiest's immediate colleague in the 1st year of theology.

Apart from this chronological framework, nothing more substantial could so far be found on Verbiest's presence and activities in his Roman period.¹⁰ In view of the prominent position (and prestige) of A. Kircher and his assistant G. Schottus at the *Collegio Romano*, the accessibility of the *Musaeum Kircherianum*, and the public (if not exhibitionistic) experiments of A. Kircher, it seems almost impossible that Verbiest

⁶ Gaspar (Kaspar) Schottus (°1609-†1666), assistant of A. Kircher in Rome, especially in the period 1652-1655: see Alex G. Keller, 'Schott, Gaspar', in *Dictionary of Scientific Biography*, vol. 12 (New York, 1975), 210-211.

⁷ See the *Catalogi Breves Prov. Romanae* in *Archivum Romanum Societatis Iesu* (ARSI), Rom. 81, f° 67v.

⁸ Alphonse Roersch, 'Correspondance inédite de Wallius', *Le Musée belge. Revue de philologie classique*, 25 (1921), 29-37 (p. 37).

⁹ Cf. *Sidronius Hosschius (Merkem 1596 - Tongeren 1653). Jezuïet en Latijns dichter*, ed. Dirk Sacré (Kortrijk, 1996), p. 44 (n. 143).

¹⁰ It is quite ironical that since the spring of 1653, the Polish Jesuit Michael Boym (1612-1659), coming from China as ambassador of the Ming dynasty, lived in one of the Jesuit residences of Rome, in all probability in the *Collegio Romano*, and helped A. Kircher with the Chinese materials in his forthcoming (1667) publication *China Illustrata*; all this happened so to speak 'under the eyes' of F. Verbiest, the future China missionary, who in those days was still thinking of the mission in South America.

remained unaware of Kircher's presence and work. That he actually was acquainted with it is now implicitly confirmed by these two letters, with their references to some aspects of Kircher's activities on the spot. Besides, the personal greetings at the end of the first letter to G. Schottus (cf. *infra*, sub 2) seem, in my opinion, to exclude that this acquaintance was merely a distant and purely passive one.

At the end of the academic year 1652-1653, it was the General himself who, on 4 October 1653, reported from Rome to the Provincial in Flanders about his decision to send Verbiest to *Nueva Granada*, in the company of the Procurator of that Province.¹¹ This may have been done after reiterated personal demands of F. Verbiest, of which however nothing is preserved, and certainly at the request of the Procurator himself.¹² This departure from Rome took place after 11 October, when Verbiest was still there, according to the aforementioned postscript in the letter of A. Estrix to Wallius of that date. This same passage also proves that the imminent departure of Verbiest for the West Indies was — albeit informally — a 'public secret' already generally dispersed among the fellow fathers of the *Provincia Flandro-Belgica*.¹³ It became the direct incitement for some other Jesuits in Flanders to put aside their reticence, and to apply for the mission themselves. A case in point is Ignatius de Melga(e)rt, S.J. (1624-1669), former colleague of Verbiest in the SJ college of Brussels, who on 30.01.1654 applied for the China mission by referring explicitly to Verbiest's example.¹⁴

More details on Verbiest's departure from Rome, and the journey to Seville are unknown, and the next information we have on Verbiest dates

¹¹ The draft of this letter is preserved in ARSI, Fl.-Belg., 6, I, Epist. Generalium 1643-1664, f° 575v. (date: 4 Oct. 1654). The Vice-Province *Novi Regni Granatensis* was established in 1605, and became a Provincia in 1611. The main Jesuit colleges were in Cartagena and Bogota.

¹² 'Procuratori Provinciae Novi Regni Granatensis qui inde huc missus fuit, negotiorum causa et simul ut operarios impetret pro illa vinea, inter alios complures concessi Ferdinandum Verbiest (...)'.
¹³ 'Remittit salutem R(everenti)ae V(estr)ae mox non ita commode missurus M(agister) Ferd(inandus) Verbiest. Iam intellexerit R(everentia) V(estra) cogitare illum in Indiam cum P(atre) Procuratore Novi Regni. Credo istud per provinciam modo esse pervulgatum, nolim tamen ipse intelligat à me esse quidquam perscriptum'.

¹⁴ His application letter is in Rome, ARSI, FG 752 / 20, nr. 222; the relevant passage reads: 'Nescio quam in spem me erigit P. Ferdinandus Verbiest, meus in docendi munere per plures annos collega, qui nunc beneficio R(everendae) A(dmodum) T(uae) P(aternitatis) ad cupitas oras properat, interruptum alias aliquorum malevolorum malevolis consiliis iter feliciter perfecturus. Animat enimvero ille me ut quod illum obtinuisse intelligo...a me posse non desperans'.

from some 10 months later, from his own letter from Seville, of 3 August 1654, presented and discussed in the next paragraph.

2. Verbiest's letter from Seville (1654)

The text of this autograph letter is preserved in the *Epistolarium* of A. Kircher, now in APUG, call number 567, f° 188r. The contents can be summarized as follows. After his stay at the *Collegio Romano* during the academic year 1652-1653 and after receiving permission to go to *Nueva Granada*, Verbiest was temporarily sent to Seville to attend courses during the (rest of) the academic year 1653-1654. It was apparently the intention to leave with the West-Indian fleet of Seville; but it had left already on 11 July, contrary to expectations. As the Procurator had tarried during his visit in Madrid, the company missed this opportunity. Therefore, it was decided that Verbiest should continue his 2nd and 3rd year of theology (the latter starting on 9.09.1654) in Seville until at least February 1655. From Seville, he again contacted A. Kircher, signalling the general scarcity of his publications in Spanish libraries, and suggesting him that he send some specimina there. He asks, on behalf of Father A. (de) Araoz, S.J., a drawing of the fountain erected in 1622, in front of the *Domus Professa* in Rome, on the occasion of the canonization of I. Loyola. He reports the arrival of the West-Indian fleet on 16 July (1654) last, bringing a.o. the *martyrologium* of C. Beudin, S.J. for publication in Rome or Madrid. Verbiest promises to send, in return, after his arrival in South America, several curiosities from *Amazonia* to A. Kircher, for his *Mundus Subterraneus*, then in preparation (but only published in 1664-1665). This proves Verbiest was well acquainted with Kircher's work in progress, undoubtedly as the result of personal meetings during his stay in the *Collegio Romano*; it was there, too, that he had made personal contact with G. Schottus, who receives a personal greeting from him, together with his fellow countryman A(egidius) Estrix.

Reverende in Chr(ist)o Pater

Pax Christi

- Magnum hîc est nomen R(everentiae) V(estr)ae, et per alias Hispaniae urbes magna librorum suorum aestimatio apud omnes, etsi plerique eos tantum
5. famâ atque ex aliorum relatione cognoverint. Valde dolent eos per Hispaniam non distrahi, neque hîc venales exponi, imo nec reperiri, nisi fortasse apud privatum aliquem, illorum exemplar. Operae praetium videtur mihi

facturus [*sic!*], si aliquot exemplaria omnium suorum operum destinaret ad has partes.

10. Petiit a me R(everendus) P(ater) Antonius Araoz, vir amplo et capaci omnino ingenio, ac mathematicarum disciplinarum prae ceteris studiosus atque apprimè intelligens, musicae amator singularis, ut hoc quasi commune apud viros eruditos desiderium scriptorum R(everentiae) V(estrae) perscriberem, atque rogarem nominatim ut mitteret delineationem seu schema aliquod celeberrimi illius fontis, qui anno canonizationis S(ancti) P(atris) Nostri Ignatii exhibitus est populo Romano in area illa, quae est ante templum domus Professae Romae vel siquid in hoc genere praeclari habet. Verum, cum omnia vestra opera sunt praeclara, operae pretium, ut dixi, faceret, si huc aliqua destinaret. Rogo R(everentiam) V(estram) huic Patri in mea absentia dignetur respondere.
20. Ego hîc morabor usque ad mensem Februarium anni sequentis; nam cum classe huius anni, quae solvit iam 11 Julii, P(ater) Procurator noster discedere non potuit, tum ob inopinatum classis decessum, tum ob plurima sua negotia, quibus Madriti detinetur. Interim tertium Theologiae meae annum
25. hîc conficiam, eumque ingrediar 9 Septem(bris), nam hoc / die studia litterarum hîc resumunt.

16 Julii feliciter huc rediit ex India classis anni superioris, divitiis Occidentis onusta. Appulit cum eâ R(everendus) P(ater) Procurator Mexicanus, item socius P(atris) Procuratoris Peruani, nam ipse Procurator in itinere obiit.

30. Mexicanus inter caetera adfert secum martyrium illustre P(atris) Cornelii Budini, Gravelingae in Flandria nati, olim superioris mei cum ex Flandria in Hispaniam tenderem; Romae vel Madriti edet illud in lucem. Plura mittam ad R(everentiam) V(estram) ex Ripa Fluminis Amazonum, de quo mirabilia et stupenda referuntur; mittam, inquam, ea ocularis testis pro
35. Mundo tuo [*sic!*] Subterraneo, si tamen subinde R(everentia) V(estra) ad me scribat, ut intelligam an ad viventem rescribam, an ad mortuum. Plurimam salutem R(everendo) P(atri) Schott et M(agistro) Estrix.

[*in margine*]

Hispani 3 Augusti 1654.

R(everentiae) V(estrae) Servus in Chr(ist)o Ferdinandus Verbiest, nunc more Hispanico Hernando Berbiz.

[f° 188v.] Al P(atre) Athanasio Kirchero dela Comp(ania) de Jesus. Romam.

5 cognoverint: eos cognoverint *ms. ante corr.*

18 opera: *supra lin. add.*

Already before, in 1646, Verbiest had stayed in Seville for a while, when waiting with 8 fellow fathers from the Flandro-Belgian Province for authorization to go to the West Indies, more precisely *Nova Caledonia* (*Nueva Vizcaya*), under the leadership of Cornelius Beudin (on whom see *infra*). For this second stay in Seville, in 1654, the present letter seems

to be almost the only documentary evidence, and Verbiest's name is not mentioned in the *Catalogi* of the former *Provincia Baetica*.¹⁵ Therefore, the only other confirmation of this second stay is the printed text of his doctoral dissertation, which he defended at the end of this period (cf. *infra*). This promotion took place in the *Collegium Sancti Hermenegildi*, where F. Verbiest in all probability had also stayed during his Seville period.¹⁶ This was the most important of the Jesuit residences in this city (apart from the *Domus Professorum*, the *Domus Probationis*, the *Collegium Conceptionis B.V. Mariae* and the *Seminarium Anglicanum*). It was along the present *Plaza de la Concordia*, where now — after the College's destruction — only the St. Hermenegildo Chapel, at the homonymous Plaza, reminds of it. According to the date of signing, Verbiest sent his letter to A. Kircher at the end of his first year in Seville, i.e. at the end of his 2nd year of theology, after it was decided to stay for another year. The signing of the letter refers to the phonetic Hispanization (*more Hispanico*) of his name in the Seville context (*Verbiest* / *Berbiz*) which has to be distinguished from the complete substitution of missionary names, as happened in Portugal (where, according to not confirmed but reliable information, he would have received the name of *Ribeiro*).¹⁷

The most interesting information of this letter concerns A. Kircher and the circulation of his books in contemporary Spain, and Verbiest's contacts with Father A. Araoz in Seville; moreover, several other points are touched upon, viz. the celebrations of Ignatius's Canonization in 1622 in Rome, and the arrival of the martyrology of C. Beudin, F. Verbiest's previous 'leader' during his first tentative journey to Spain and the West Indies in 1646.

First, Kircher's books. Verbiest's information bears on two points, viz. the high esteem for Kircher's books in Spain (more precisely for those

¹⁵ I could only find the *Catalogi Tertii* of the Baetica province for the year 1655 (Roma, ARSI, Assistentia Hisp., Baetica, 14, II, f. 333r-336v; dressed in January 1655); these catalogues contain only the names of the professors and the other personnel, not those of the students (contrary to the corresponding Catalogues of the Prov. Flandro-Belgica).

¹⁶ One of the main arguments is that other Flemish Jesuits too, when temporarily staying in Seville, lived there; see, for instance, Petrus Van Hamme in 1686: *Het leven van Pater Petrus-Thomas Van Hamme, missionaris in Mexico en in China (1651-1727)*, ed. Constant Philippe Serrure (Gent, 1871), p. 47.

¹⁷ According to Francisco Rodrigues, *Jesuitas Portugueses Astronomos na China (1583-1805)* (Porto, 1925), p. 14.

published before 1654, or in that year at the latest) and — quite paradoxically — the almost inexistent dissemination of the same in (this part of) Spain: ‘Valde dolent eos (libros) per Hispaniam non distrahi neque hîc venales exponi, imo nec reperiri, nisi fortasse apud privatum aliquem, illorum exemplar’. Therefore, Verbiest suggests to the author to send at least some copies of all his publications to Spain.

This testimony on the esteem for and the distribution of Kircher’s books in Spain should be confronted with the other data on the same topic, as collected especially by J. Fletcher.¹⁸ Here we find at least one reference to the presence of *Kircheriana* in Madrid, more precisely of eighteen (!) copies of the *Musurgia* in the possession of the Scottish Jesuit Hugo Sempile (Sempilius: 1596-1654), who sold ten copies for 480 *Regales nummos Hispanienses*.¹⁹ Other tokens of esteem are reported by Thomas F. Glick, who refers to three or four Spanish *novadores* who were, in the middle and the 2nd half of the 17th century, in direct (epistolary) contact with A. Kircher, viz. Vicente Mut (†1687; Mallorca), Juan Caramuel y Lobkowitz (†1682, residing mainly in Italy), José de Zaragoza y Villanova (1627-1679, teaching consequently in Mallorca, Barcelona, Valencia and Madrid) and Vicente de Lastanosa (1607-1684 in Huesca).²⁰ All this suggests that at least these people, in these places, had read (some of) Kircher’s publications. But all this does not necessarily contradict Verbiest’s testimony: he was not aware of the situation in Madrid — which he never visited — and speaks as an eyewitness only of the situation in Seville; but it cannot be ruled out that books were present in private collections which were obviously inaccessible to him. Verbiest would signal a similar situation some years later in Coimbra (cf. *infra*), but whereas at that time he had access to such a private library (of a medical doctor!), this was apparently not the case in Seville. This fits in with the general (and preliminary) conclusion of some research on

¹⁸ John Fletcher, ‘Athanasius Kircher and the Distribution of his Books’, *Library*, 23 (1968), 108-117.

¹⁹ From Sempile’s letter to Kircher from Madrid, of 27/2/1652, i.e. some two years before this Verbiest letter.

²⁰ Thomas F. Glick, ‘On the Influence of Kircher in Spain’, *Isis*, 62 (1971), 379-381; for the contacts between Caramuel and Kircher, see Ramon Ceñal, ‘Juan Caramuel. Su epistolario con Atanasio Kircher, S.J.’, *Revista de Filosofía (Madrid)*, 12 (1953), 101-147. On the *novadores* in the history of mathematics in Spain, see, a.o. Victor Navarro Brotóns, ‘Riccioli y la renovación científica en la España del siglo XVII’, in *Giambattista Riccioli e il merito scientifico dei gesuiti nell’età barocca*, Biblioteca Nuncius. Studi e Testi, 44, ed. Maria Teresa Borgato (Firenze: Olschki, 2002), pp. 291-317.

17th-century libraries in Seville, from which it emerges that reading books was relatively poorly diffused there, and that in the 'good' libraries which existed at the time — both public and private — 'las ciencias puras brillan por su ausencia'.²¹ There may have been some exceptions, such as the private library of Juan Cruzado de la Cruz y Mesa (17th century), which in 1691 had some volumes of P. Gassendi and T. Hobbes. An interesting private collection was in all probability also that of Vicente de Lastanosa in nearby Huesca, who 'had a famous *Museum* and Library and who shared Kircher's interest in *scientific instruments*'. All in all, Verbiest's testimony could confirm a certain delay in the arrival of 'up-to-date' scientific books and in public scientific research (and instruction) in Seville in the middle of the 17th century. This seems to have changed only in the last decades of the 17th century, a.o. with the establishment in 1681 of the *Colegio San Telmo*.

In return, Verbiest promises to send (*mittam*), after his arrival in *Nueva Granada*, curiosities, called *mirabilia et stupenda*, from Nueva Granada — somewhat inadequately called a *Ripa Fluminis Amazonum* — to Kircher.²² With this, he continued an established tradition within the Jesuit Society, according to which fellow fathers sent (or brought) from their far-away missionary journeys curiosities, either *artificialia* (artefacts) or *naturalia*, to Kircher's *Musaeum* in the *Collegio Romano*.²³ After his one-year stay in the Collegio, Verbiest was well aware of this custom, and he certainly had seen this collection, as it was removed precisely one year before he arrived, i.e. in 1651, from Kircher's own room (*cubiculum*) to the more spacious, open and accessible *Galleria*.²⁴ Verbiest is thinking in particular of *curiosa* which would be useful material for Kircher's *Mundus Subterraneus*, the first part of which only appeared in Amsterdam in 1665, i.e. more than ten years later, but the draft of which was already in

²¹ Antonio Dominguez Ortiz, *Historia de Sevilla. La Sevilla del siglo XVII*, Coleccion de Bolsillo, 93 (Sevilla, 1984), p. 260.

²² In fact, the *Reyno de Nueva Granada* was watered by the Rio Orinoco, not the Amazon River. Probably Verbiest was not well aware of the complex hydrographic system in this area, which had only recently been described by Father Cristovão Acuña, *Nuevo descubrimiento del Gran Rio de las Amazonas* (Madrid, 1641).

²³ The most splendid illustration of the curious and also exotic contents of this *Musaeum* — as far as they still exist or can be retraced — was the 2002 exhibition in Rome, and the catalogue *Athanasius Kircher, S.J. Il Museo del Mondo*, ed. Eugenio Lo Sardo (Roma: Edizioni De Luca, 2002).

²⁴ On this episode of the *Musaeum*, see now especially Michael John Gorman, 'Between the Demonic and the Miraculous: Athanasius Kircher and the Baroque Culture of Machines' (<http://www.stanford.edu/group/shl/Eyes/machines/>)

some phase of elaboration. In this visionary work, Kircher describes the working of the elements within the earth, but it is not directly clear which items Verbiest had in mind to send with regard to these contents.²⁵

This letter further refers to Verbiest's personal contacts with one *R.P. Antonius Araoz, vir amplius et capax omnino ingenio ac mathematicarum disciplinarum*.²⁶ This is Antonio (de) Araoz, S.J., born in Seville about 1603, who entered the Society of Jesus about 1621, was ordained in 1627, and took his final vows on 22 October 1637. He devoted all his teaching life to Philosophy, incl. science at the English Seminar in Seville.²⁷ According to the *Catalogi Tertii*, he was in 1655 *Praefectus rerum spiritualium et studiorum*. His relation with F. Verbiest (who was 20 years younger) is not clear; probably he was his Spiritual director. In Verbiest's letter he is portrayed more particularly as an eager mathematician — which may indirectly also shed some light on the activities and interests of Verbiest in this early period, and makes Araoz an interesting 'partner' to A. Kircher. The qualification as *mathematicarum disciplinarum prae ceteris* [sc. *disciplinis? Jesuitis?*] *studiosus* — rather vague in itself — concerns at least two fields, viz. that of music and that of hydrostatics, in accordance with contemporary classifications two parts of mixed mathematics.²⁸ These interests are confirmed by another letter of A. Araoz, written directly to Kircher, on 5 July 1666, on the occasion of the receipt — after many (16?) years of waiting — of a copy of Kircher's *Musurgia*²⁹; in this letter he refers to *nostra mus-arithmetica ars*, but also asks for the plans of another fountain in Rome, on which see *infra*. At any rate, for both aspects his interests were also close to those

²⁵ For the contents of *Mundus Subterraneus*, see (besides the two volumes themselves): Jocelyn Godwin, *Athanasius Kircher. A Renaissance Man and the Quest for Lost Knowledge* (London: Thames and Hudson, 1979), pp. 84-94; a recent reassessment is offered by Gerhard F. Strasser, 'Science and Pseudo-science: Athanasius Kircher's *Mundus Subterraneus* and his *Scrutinium... Pestis*', in *Knowledge, Science, and Literature in Early Modern Germany*, Studies in the Germanic languages and literature, 116, eds. Gerhild Scholz Williams - Stephan K. Schindler (Chapel Hill & London, 1996), pp. 219-229.

²⁶ The name is incorrectly given as Antonius Aradz (sic) by John Fletcher in *Athanasius Kircher und seine Beziehungen zum Gelehrten Europa seiner Zeit*, Wolfenbütteler Arbeiten zur Barockforschung, 17, ed. John Fletcher (Wiesbaden: Harrassowitz, 1988), p. 161.

²⁷ These data were taken from the Triennial Catalogues of the Provincia Baetica; I owe this information to Joaquín M. Domínguez, SJ, archivist of the same Province in Granada.

²⁸ Whether he was also active in the field of pure mathematics is unknown and rather uncertain; his name is not mentioned by Albert Dou, 'Matemáticos españoles jesuitas de los siglos 16 y 17', *Archivum Historicum Societatis Iesu*, 66 (1997), 301-321.

²⁹ This letter is in *Archivio della Pontificia Università Gregoriana* (APUG), 562, f° 124r-126v.

of the later Verbiest, who during his stay at the Chinese-Manchu Court was not only involved in translating selected fragments from Kircher's *Musurgia* into Chinese — or at least had the intention to do so —³⁰, but who also developed very many and varied activities in the orbit of public engineering (calling himself an *ingeniarius*), including pumps and fountains!³¹

As for the fountain mentioned in this letter: on the occasion of the celebration of Ignatius's and Franciscus's canonization on 12 March 1622, the construction of public fountains was apparently part of the equipment with which the Jesuits — with their instinct for theatrical and monumental spectacle — decorated the two most important Jesuit buildings in Rome, viz. the *Domus Professa* (next to the Gesù church) and the nearby *Collegio Romano*.³² In view of Araoz's mathematical profile, he might have been interested in the plans (*delineatio seu schema*) of the fountain constructions not primarily for historical reasons, nor for their esthetic or pious aspect, but as hydrostatic achievements.

Finally, there is some information concerning the passage through Seville — the harbour *par excellence* for the West Indian fleet, as Lisbon was for the East Indian fleet — of the Jesuit Procuratores from Mexico (also called *Nueva España*) and Peru. Their arrival, on 16 July, was an emotional moment for Verbiest, as the former brought the news of the death of Cornelius Beudin (1615-1650), also called Godinez, who was once responsible for the group of Flemish fathers, incl. F. Verbiest, after their selection in 1646 to go to South America, but was in the end the only one authorized to leave.³³ His heroic death on 4.06.1650 as a martyr — in fact the ultimate wish of all the young Jesuits who left for the Indies — must have provided

³⁰ See his letter of 1 August 1685 (Josson - Willaert, *Correspondance*, p. 491): 'Hanc ipsam ob causam ego modo ex Musurgia P(atris) Kircheri rariora aliqua tam theoretica quam practica in idioma Sinicum verto, et in exigui tractatus libellum compono, Imperatori cum reversus fuerit offerendum, ut scilicet illam quam de scientiis Europaeis concepit opinionem vel hoc modo utcumque confirmem'.

³¹ See, a.o., his chapter 22 in *Astronomia Europaea* (Dillingen, 1687).

³² On the former I have no more information. On the celebrations and the public fountain at the Collegio Romano, see Riccardo G. Villoslada, *Storia del Collegio Romano dal suo inizio (1551) alla soppressione della Compagnia di Gesù (1773)*, *Analecta Gregoriana*, 66. Series Facultatis Historiae Ecclesiasticae. Sectio A, 2 (Roma: Aedes Universitatis Gregoriana, 1954), pp. 285-286 and Pietro Tacchi Venturi, 'Le feste della santificazione nel Collegio Romano', in *La canonizzazione dei Santi Ignazio di Loyola fondatore della Compagnia di Gesù (...). Ricordo del terzo centenario 12 Marzo 1922* (Roma, 1922), pp. 100-111.

³³ See Beudin's letter, published by C.J.N(uyts), in *Philippus Nutius à la Cour de Suède* (Brussels, 1856), p. 25.

a renewed incitement to Verbiest's missionary zeal and determination.³⁴ Thanks to Verbiest's letter, we know that this information arrived in Seville on 16 July 1654; it was part of the *Litterae Annuae* (*Carta Anua*) of the Mexican Province for the year 1651, composed by the provincial, Andrés de Rada (1601-1673). Contrary to the original intention to publish it in Rome or Madrid, the text, or a copy thereof, arrived in one way or another in the Low Countries, and was re-written by the Neo-Latin poet Jacobus Wallius; it was published as one of the three parts of his *Relatio Triplex de Rebus Indicis*, viz. *I.R.P. Cornelii Beudinij dicti Godinez Martyrium*, published in Antwerp in 1654 (J. Meursius).³⁵

Eight months after this letter Verbiest, after less than three years, and thus precociously, concluded his theological studies (which normally took 4 years) with a doctoral dissertation, which he defended on 13 April 1655 in the *Colegio de S. Hermenegildo*, with Luis da Sola (1611-1671) as his tutor. This early ending may have resulted from some accelerated study through *studium privatum*, as was later the case with his successor Antoine Thomas. His dissertation — of which the (abbreviated?) published text has survived — still awaits further investigation.³⁶ Shortly thereafter, on 19 and 26 June, he again applied, with insistence, to be sent out as a missionary. These letters are unfortunately not preserved in the known *Litterae Indipetae* collections, but from the General's answer we know that Verbiest had sent them from Genua (where he must have arrived for unknown reasons [on his way back to Rome?] in the Spring of 1655) and in which he now applied for China.³⁷ This is a double surprise, and implies a drastic re-orientation on the part of the applicant, which must have occurred during his stay in Seville, i.e. in 1654 and the first half of 1655. One of the direct reasons for this shift — which is by no means isolated in the corpus of *Litterae Indipetae*, on the contrary — was certainly the repeated failure of his previous attempts to get an authorization for South America. This shift is roughly simultaneous with

³⁴ The desire for martyrdom is a fixed theme in the *Litterae Indipetae* from the *Provincia Flandro-Belgica* and elsewhere; it was also expressed by F. Verbiest, in unusually colourful and dramatic terms, in his circular letter to all the Jesuit colleges of Europe, of 15.08.1678: see Josson - Willaert, *Correspondance*, pp. 230-253 (pp. 248-253).

³⁵ See Robert Streit, *Bibliotheca Missionum*, 5: *Asiatische Missionsliteratur 1600-1699* (Rom - Freiburg - Wien: Herder, 1964), nr. 1913.

³⁶ The only copy I know of this text was until recently in the *Algemeen Rijksarchief* in Brussels, and is now in the new State Archives of Antwerp (L 1431-1437).

³⁷ The text of the — positive — answer of the General dates from 10 July and is published in Josson - Willaert, *Correspondance*, p. 5.

the visit of Martino Martini, S.J. (1614-1661), on his return from China to Europe, and his triumphant *tour* through the Low Countries, which engendered a huge number of applications for China from the Belgian Jesuits, from novices to ordained Jesuit fathers³⁸; among them were Philippe Couplet (1622-1693), Hendrik de Prince (1632-1671), and François de Rougemont (1624-1676), who had been Verbiest's *proximi* in earlier phases of his Jesuit curriculum. One is tempted to see a connection between this tremendous enthusiasm for the China mission in the *Provincia Flandro-Belgica* and this shift in Verbiest's missionary strategy, in faraway Seville. I assume that there were, indeed, some epistolary contacts between the Jesuits in Flanders and their colleagues in Seville, either on the level of the authorities, or even on that of individual fathers, just as there were channels of communication between the Jesuits in Rome and those in Flanders.³⁹

At any rate, after having received the General's answer in Genua, Verbiest stayed there for another half a year, preparing for the journey to China. Unfortunately, I have so far not been able to find documentary confirmation. After the arrival there of M. Martini from Rome — who would lead the whole group of 12 candidates to China — they left on 8.01.1656 for Lisbon, where they arrived only in February, after a rocambolesque hijacking off Alicante.⁴⁰ Having thus missed the embarkation of the 1656 fleet for the Far East, the group was forced to stay for approximately a year in Portugal. This was the occasion for the Lusitanian Provincial to send F. Verbiest to Coimbra, to teach mathematics. On this period we are informed thanks to a second letter of F. Verbiest to A. Kircher, published and discussed in the next paragraph.

3. Verbiest's letter from Coimbra (1656)

The text of this autograph letter is preserved in Kircher's incoming correspondence, now in APUG, call number 568, f. 71. In a nutshell, the contents can be described as follows. F. Verbiest, after his arrival in

³⁸ On this 'tour', see Noël Golvers, 'Viaggio di reclutamento di M. Martini, S.J., attraverso i Paesi Bassi nel 1654', *Studi Trentini di Scienze Storiche*, 74 (1995), 447-474.

³⁹ On the rapid though informal diffusion of the news of Verbiest's selection for *Nueva Granada* from Rome to Flanders in 1653, see *supra* (n. 13).

⁴⁰ Described in full detail by F. Verbiest to I. de Melgaert: cf. Jossion - Willaert, *Correspondance*, pp. 6-38.

Coimbra, reports on some recent events: the death of King João IV (Nov. 6, 1656), the succession to the throne of Afonso VI, and the arrival of the yearly East Indian 'fleet' in Lisbon, bringing a.o. the *Litterae Annuae* of 1652. The 17 fellow fathers, awaiting their departure for Macao with Father M. Martini, are dispersed over various Jesuit colleges throughout Portugal; only Verbiest was sent to Coimbra, in order to teach mathematics, which he learns more than he teaches. Thanks to an anonymous Doctor in medicine, who has most of Kircher's books, he (F. Verbiest) has access to them; nevertheless, in a Postscript, he shows himself grateful for any offering of books by Kircher on the behalf of the Chinese mission.

Al molto R(everen)do P(atre) Athanasius Kircher della Comp(ania) di Giesu. Roma.

Reverende in Chr(ist)o Pater.

Pax Christi

Post varios tandem casus, Deus huc me tulit. Jam paulatim appropinquat tempus navigationis nostrae. Quinque naves majores vel, ut alii volunt, octo solvent mense Martio in Indiam.

Sextâ Novembris obiit Joannes Quartus Lusitaniae rex: quatuordecim diebus interpositis successit in regnum et sortem paternam eius filius secundogenitus Alphonsus, sextus istius nominis, anno aetatis suae 14 circiter. Pater jam tot annis felix et pacificum regnum tenuit, ardente bello per totam pene Europam. Holandos Brasiliâ et Angolâ expulit, atque eorum vires multum fregit, frangitque quotidie in India Orientali. Certe hoc anno, paulo ante regis obitum, appulit navis maior, ex India redux, opibus Orientis onusta, quae retulit multas clades Holandorum, et rem politicam bono illic esse loco.

Allatae sunt praeterea Litterae Annuae Chinenses et Tunquinenses anni 1652, quo quidem anno in China facile 8834 sacrum baptismum susceperunt, et totidem vel plures in regno Tunquinensi. Res publica Christiana plurimum se illâ extendit et ecclesiae primitivae faciem refert, uti melius R(everentia) V(estra) intellet ex litteris annuis, quae modo hâc eâdem opportunitate Romam mittuntur.

P. Martin(i)us 17 circiter socios secum ducet, qui quidem in diversis collegiis modo degunt. Ego solus Conimbricam missus sum, ut mathematicam nostris legerem; ceterum ego quidem illam disco potius quam doceo: percommode mihi accidit ut libros R(everentiae) V(estrae) hîc invenerim apud doctorem medecinae (*sic*), huius Academiae praecipuum, qui omnes propemodum libros R(everentiae) V(estrae) penes se habet, et alios avidè exspectat, quos R(everentia) V(estra) toties promittit, quique R(everentiam) V(estram) plurimum salutatur. Sic me S(anctissimis)

R(everentiae) V(estrae) Sacrificiis commendo 18 Decem(bris) 1656/
Conimbricae

Servus in Christo
Ferdinandus Verbiest

Si quid R(everentia) V(estra) ex libris suis curiosi ad me mittat, eleemosynae loco accipiam, et majori Dei Glorae in Sinis serviet.

In this letter too, the information can be grouped around the peripeties of Verbiest's curriculum, the distribution and reception of Kircher's books in Portugal, the history of education in the Jesuit institutions of Coimbra, and varia, this time with an Oriental flavour.

After Verbiest was sent to Coimbra, sometime in the first half of 1656, the explicit intention was that he would instruct the Jesuit students (*nostris*) in mathematics (*ut legerem mathematicam*).⁴¹ This refers with certainty to the *Colégio das Artes*, next to the Jesuit *Colégio de S. Jesus*, which was in principle reserved for Jesuits. The appointment of a Flemish Jesuit in this didactic position in a Portuguese institution — albeit for a short while — is not without parallel, neither before nor after 1650, and is due to a lack of competent native professors.⁴² For the same reason, the mathematical courses at the *Universidade* of Coimbra were cancelled and the *aulas* closed.⁴³ According to Ignatius Hartoghvelt (1629-1658), a Dutch-Flemish Jesuit who lived in the Coimbra Jesuit college in

⁴¹ On the use of the qualification '*nostris*' within the Society as the expression of the corporatistic culture, see Alexandre Brou, in *Revue d'histoire des missions*, 11 (1934), 195-196 and John W. Witek, *Controversial Ideas in China and in Europe: A Biography of Jean-François Fouquet, S.J. (1665-1741)*, Bibliotheca Instituti Historici S.I., 43 (Rome: Institutum Historicum Societatis Jesu, 1982), p. 28.

⁴² Verbiest's appointment may be seen as a first and tentative answer from the Jesuit Provincial in Portugal to the Roman Superiors, who shortly before had deplored the poor state of affairs in the field of mathematical teaching in the Lusitanian province, and who had strongly advised to establish stable mathematical courses in one or two colleges at least, in order to train some local specialists. This recommendation was formulated, with regard to the college of Evora, by Girolamo Chiaramonti, during his thorough visit of the Province in 1651-1652. See on this U. Baldini, 'The Teaching of Mathematics in the Jesuit Colleges of Portugal from 1640 to Pombal', in L. Saraiva - E. Leitão (eds.), *The Practice of Mathematics in Portugal* (Coimbra, 2004), pp. 312-313.

⁴³ On this situation, see a.o.: Domingos Maurício, 'Os Jesuítas e o ensino das Matemáticas em Portugal', *Brotéria*, 20 (1935), 189-205; Francisco Gomes Teixeira, *Historia das matemáticas em Portugal* (Lisboa, 1934), p. 204; Henrique Leitão, 'A Periphery between two Centres? Portugal on the Scientific Route from Europe to China (sixteenth and seventeenth centuries)', in *Travels of Learning. A Geography of Science in Europe*, eds. Ana Simões - Ana Carneiro - Maria P. Diogo (Dordrecht - Boston - London: Kluwer Academic Publishers, 2003), pp. 19-46.

1655, i.e. one year before Verbiest, the library of the *Colégio* was also 'very poor' ('zeer slecht').⁴⁴ This is confirmed some 25 years later by Antoine Thomas, S.J. (1644-1709), in 1678-1680 in the same position as F. Verbiest, who complained about the bad equipment of the Jesuit Academy, in particular with regard to mathematical books for his teaching.⁴⁵ It appears from this Verbiest letter that Kircher's books too — most of them with subjects situated in the field of mixed mathematics — were inaccessible via the common Jesuit channels, but were by chance accessible to F. Verbiest thanks to a private library, viz. that of a medical doctor, the (or a) '*praecipuus*' of the Academy, in all probability the *Universidade*. It would be very interesting to identify this academic authority, but so far I have been unable to do so. In his letter, Verbiest characterizes his mathematical instruction in a short formula: *illam* [sc. *Mathematicam*] *disco potius quam doceo*. This formula seems a variant of the well-known Senecan and Humanist didactic adagium *docendo discimus*, this time with emphasis on the aspect of 'self-learning'. Although displaying some usual self-humiliation, this may to some extent correspond to the reality, and reflect the intense preparations Verbiest had to make for his classes, in a discipline which, according to our sources, he had never taught before, and for which he lacked appropriate manuals. This reminds us of the *studium privatum* which, according to his former *proximus* F. de Rougemont, was the most important source of Verbiest's mathematical skill, and which was the reason why he would be selected, in 1660, after his arrival in China, by Adam Schall von Bell (1592-1666) to be his assistant and future successor at the Observatory in Peking. At any rate, both the punctuation and the verbal tense (*invenerim* in the conj. perf. expressing not simultaneity but anteriority with regard to the main verb *accidit*) suggest a (causal) relation between this self-study and the presence of Kircher's books in that private library: 'I learn it more than I teach it: by chance it happens that I have found your books etc.'. By this, *mathematicam* — as found in Kircher's books, and as it was the subject of Verbiest's teaching and self-study — was broader than 'pure mathematics' and included other related disciplines, often classified as mixed mathematics.

⁴⁴ See his letter of 23 May 1655, the autograph of which is now in the Algemeen Rijksarchief of Antwerp (before: Brussels), Fonds Jez., Flandro-Belg., L 1437, f° 1v.

⁴⁵ For all these and the following aspects of Verbiest's mathematical formation during the Coimbra period, see my aforementioned contribution on 'F. Verbiest's mathematical formation etc.' (see n. 5).

Other aspects of this letter's contents are rather disparate, but they have all in common a strong 'Jesuit' connotation or direct implications for the Jesuit mission in China; this should not surprise in this intra-Jesuit correspondence. This information concerns first the decease of João IV on 6.11.1656 and the succession of Afonso VI.⁴⁶ In view of the *padroado* the Portuguese King was the personal protector of the China mission, and the goodwill of the deceased towards it was well known, while in 1678 Verbiest would also praise the role of Afonso VI in this respect.⁴⁷ The related *res gestae* of the deceased King speak of Verbiest's not very friendly feelings towards the *Holandi* (always in this spelling), who in his eyes represented the so-called heretics who, by their successful maritime and commercial enterprises in the Far East and their technological superiority at sea, threatened the West- and East-Indian missions, and their accessibility from Europe.

Also related is the arrival of the return fleet (*torna-viagem*) from the East Indies in Lisbon, shortly before the King's decease, i.e. in October; this is comparatively late in the year. In 1654, the fleet consisted of only one ship, called *navis maior*; both this number and the qualification *maior* may be typical of this period in the existence of the pluri-centennial *carreira das Índias*, which in the mid-17th century was in a deep crisis, and often sent only one *nau*, i.e. a large square-rigged ship or carrack.⁴⁸ Also is signalled the arrival — certainly with this ship — of the yearly provincial reports (*Litterae Annuae*) from the Jesuit Vice-Province of China and

⁴⁶ This succession is usually dated to Nov. 15, 1656 (see, a.o., *Grande Enciclopedia Portuguesa e Brasileira*, vol. 1, p. 503), deviating slightly from Verbiest's implicit dating to the 20th of November.

⁴⁷ A 'list' of the benefits of João IV is preserved, a.o., in ARSI, Assist. Lusitan., 55, f° 225r/v.: '*Elenchus beneficiorum quae Serenissimus Johannes IV Lusitaniae Rex in Societatem nostram collocavit*'. See also his letter to Afonso VI, in Jossion - Willaert, *Correspondance*, pp. 256-266.

⁴⁸ On the 'carreira das Índias', see in general: *A carreira da Índia e as rotas dos estreitos. Actas do VIII seminário internacional de história indo-portuguesa*, eds. Artur T. de Matos - Luís F. F. Reis Thomaz (Braga: Angra do Heroísmo, 1998). On the technical details and statistics based on the period 1490-1700 see T. Bentley Duncan, 'Navigation between Portugal and Asia in the Sixteenth and Seventeenth Centuries', in *Asia and the West (...)*, eds. Cyriac K. Pullapilly - Edwin J. Van Kleij - Donald Lach (Notre Dame, 1986), pp. 3-25, and Charles R. Boxer, *O Centro de Estudos históricos ultramarinos e as comemorações Henriquinas* (Lisbon, 1961), pp. 33-82, reprinted in *From Lisbon to Goa, 1500-1750. Studies in Portuguese Maritime Enterprise* (London, 1984). The conditions described in this Verbiest letter correspond to the fourth phase of the *carreira* (1631-1670), in the terms of T. Bentley Duncan, 'Navigation', p. 18; on the arrivals in October (only 5%), p. 14. On the Jesuits and the *carreira*: Alexandre Brou, 'Voyages de missionnaires de Lisbonne à Goa au seizième siècle', *Etudes*, 117 (1908), 178-200.

those of Tunkin, covering the year 1652; these were addressed to the General in Rome, and would therefore have been transmitted immediately from Lisbon thither.⁴⁹ Nevertheless, some details of their contents had reached Verbiest, especially the number of 8834 fresh converts; these quantitative data of the mission's state of affairs was indeed a fixed and prescribed aspect of these yearly reports.⁵⁰

Finally some news is also transmitted about the missionary group, which was to be guided by M. Martini and which would consist of about 17 *socii*. The departure was expected in March — the normal period of leaving — and the fleet to count 5 or even 8 ships. The group would finally leave Lisbon on 4 April 1657 on board of the *Bom Jesus da Vidigueira*; the names of the Jesuits are given by J. Wicki.⁵¹ After arriving in Macao on 17 June 1658, Verbiest would enter China and on 9 June 1660, Peking, never to return. From China, no letters of F. Verbiest to Kircher are preserved nor are references to any such known.⁵² Nevertheless, some remarkable Verbiestiana, no objects but only books and designs, held in the (library of the) *Collegio Romano* before 1873 may suggest that the contacts were not completely broken off; on the other hand, Kircher would represent one of the main scientific sources of F. Verbiest for his engineering and scientific experiments. This, however, is beyond the scope of this contribution.

F. Verbiest Institute

Blijde- Inkomststraat 21

B-3000 Leuven

E-mail: noel.golvers@arts.kuleuven.be

⁴⁹ These *Litterae Annuae* of China must be those preserved in Rome, ARSI, JS 117, ff° 69-146 (see: Joseph Dehergne, *Archivum Historicum Societatis Iesu*, 51 (1982), 256), or the *carta*, dated Nov. 26 and Dec. 3, of which a copy is now in Ajuda, JA 49-IV-61, ff° 205-229; 480-564.

⁵⁰ However, this number does not fit completely with the number of 8847 mentioned in the preserved year letters.

⁵¹ According to the aforementioned statistics, March was the ideal season to leave, and April a little bit late (T. Bentley Duncan, 'Navigation', p. 12). Five to eight ships was an extra-ordinary large fleet in this period. The names of the fathers are listed by Joseph Wicki, 'Liste der Jesuiten-Indienfahrer 1541-1758', *Aufsätze zur portugiesischen Kulturgeschichte*, 7 (1967), 300-301.

⁵² Verbiest's letter fragment of (about) 7 May 1661, quoted in extenso by A. Kircher in his *China Monumentis Illustrata* (Amsterdam, 1667), pp. 223-224 was originally destined to J. Grüber.